CLAIMS

1. Method for processing an RR series consisting of a plurality of samples (RR_i) representing the time intervals (δti) separating two successive heart beats or the inverse ($1/\delta ti$) of said time intervals, characterised in that (N) samples (RRi) are selected in a main time window having a predetermined length of time (n), in that said main window is cut into (m) subwindows (F_j), in that an intermediary parameter (A_j) is calculated for each subwindow (F_j) on the basis of the samples (RRi) contained in the subwindow (F_j) and in that a final parameter is calculated as a function of the intermediary parameters (A_j).

2. Method according to claim 1, characterised in that the final parameter is calculated by iteration, by shifting the main time window by a predetermined time interval (p) less than the length of time (n) of the main window.

3. Method according to claim 1 or 2, characterised in that each intermediary parameter (A_j) is a function at least of the minima (Pi) of the RR series in the subwindow (F_j) when the samples (RRi) of the series (RR) represent the time intervals (δti) separating two successive heart beats, or is a function at least of the maxima (Pi) of the RR series in the subwindow (F_j) when the samples (RRi) of the series (RR) represent the inverse ($1/\delta ti$) of the time intervals (δti) separating two successive heart beats.

4. Method according to one of claims 1 to 3, characterised in that the calculated value for the final parameter (AUCmax) is proportional to the maximum value of the intermediary parameters (A_j).

5. Method according to one of claims 1 to 3, characterised in that the calculated value for the final parameter (AUCmoy) is proportional to the average value of the intermediary parameters (A_j).

6. Method according to one of claims 1 to 5, characterised in that, for the calculation of the intermediary parameters (A_j), an envelope (C_j) is defined, linking the minimum points (Pi) measured when the samples (RRi) of the series (RR) represent the time intervals (δti) separating two successive heart beats, or linking the maximum points (Pi) measured when the samples (RRi) of the series (RR) represent the inverse ($1/\delta ti$) of the time intervals (δti) separating two successive heart beats.

7. Method according to claim 6, characterised in that each intermediary parameter (A_j) is a function of an area delimited by the envelope (C_j).

8. Method according to any of claims 1 to 7, characterised in that, prior to the calculation of the parameter, the RR series is filtered by means of a high-pass filter with a cut-off frequency f1 superior or equal to 0.1Hz, and preferably lying between 0.1Hz and 0.15Hz.

9. Method according to any of claims 1 to 8, characterised in that, prior to the calculation of the intermediary parameters (A_j), in each subwindow (A_j), the samples (RRi) of the RR series are normalised over the entire width of the main window.

10. System for analysing the variability of the cardiac rhythm, said system comprising means (1,2) of acquiring an analogue cardiac signal, means (4) of sampling said cardiac signal, and means (5) of processing the sampled signal, designed to construct an RR series consisting of a plurality of samples (RR_i) representing the time intervals (δti) separating two successive heart beats or the inverse ($1/\delta ti$) of said time intervals, characterised in that said processing means (5) are furthermore designed to calculate automatically from the series (RR) at least one final parameter in accordance with the method according to any of claims 1 to 9.

11. System according to claim 10 for the assessment of pain, the final calculated parameter characterising a level of pain.

12. System according to claim 10 for the assessment of stress, the final calculated parameter characterising a level of stress.

13. Use of the system for analysing according to claim 10 for assessing the pain felt by a living being.

14. Use of the system for analysing according to claim 10 for assessing the stress felt by a living being.

15. Method for analysing the variability of the cardiac rhythm of a living being, characterised in that it comprises the following main stages:
    - acquisition of an analogue cardiac signal of the living being,
    - sampling of said cardiac signal and construction of an RR series consisting of a plurality of samples (RR_i) representing the time intervals (δti) that separate two successive heart beats or the inverse ($1/\delta ti$) of said time intervals,
    - processing of the RR series pursuant to the method according to any of claims 1 to 9.

16. Use of the method according to claim 15 for the assessment of the pain felt by a living being, the final calculated parameter characterising the level of pain.

17. Use of the method according to claim 15 for the assessment of the stress felt by a living being, the final calculated parameter characterising the level of stress.